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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Alexandre Joly

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EXAMINER

SAUNDERS JR, JOSEPH

ART UNIT

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2614

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/502,425

**Applicant(s)**

JOLY, ALEXANDRE

**Examiner**

Joseph Saunders

**Art Unit**

2614

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 24-45 is/are pending in the application.
- 4a) Of the above claim(s) 25-28 and 34-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24, 29-33 and 43-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This office action is in response to the communications filed May 21, 2009. Claims 24 – 45 are currently pending, claims 25 – 28 and 34 – 42 are withdrawn from further consideration, and claims 24, 29 – 33, and 43 – 45 are considered below.

#### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 24, 29 – 33, and 43 – 45 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 24 is rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent and recent Federal Circuit decisions indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim recites a series of steps or acts to be performed, the claim neither transforms underlying subject matter nor is positively tied to another statutory category that accomplishes the claimed method steps, and therefore does not qualify as a statutory process. For example, the method of qualitatively evaluating a digital audio signal comprising the step of calculating a quality indicator is of sufficient breadth that it would be reasonably interpreted as

Art Unit: 2614

a step completely performed mentally or without a machine. The Applicant has provided no explicit and deliberate definition of "calculating" to limit the step to an electronic form and the claim language itself is sufficiently broad to read on a person of ordinary skill in the art being mentally determining the quality indicator by evaluating the digital audio signal.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 24, 29 – 33, and 43 – 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 24 states "said quality indicator vector comprises a vector associated with each of said time windows" and later states "said quality indicator vector has a dimension... said dimension being from 1 to 10", however if the "quality indicator vector" comprises a "vector" associated with each time window it is unclear as to how the "quality indicator vector" can have a dimension, for example, of "1" since the "quality indicator vector" comprises a plurality of "vectors" and each "vector" must have a dimension. Further, this analysis gives reason that Applicant's definition of a vector as including a dimension of "1" as claimed is contrary to its ordinary meaning. Therefore, for examination purposes the limitation "said quality indicator vector comprises a vector associated with each of said time windows"

Art Unit: 2614

will be examined as "said quality indicator vector is associated with each of said time windows".

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 24, 43, and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Timus (US 6,628,737 B1), hereinafter Timus.

**Claim 24:** Timus discloses a method of qualitatively evaluating a digital audio signal ("The present invention relates generally to signal quality measurement, and in particular to synchronization of a stored test signal with a received signal, the quality of which is to be measured," Column 1 Lines 5 – 10), comprising calculating, in real time, in continuous time, and in successive time windows ("Another requirement is that the computational complexity of the method should not be to high, since the measurements must be performed in real time," Column 7 Lines 61 – 64 see also "sliding window," Column 8 Lines 19 – 46), a quality indicator vector, wherein: said quality indicator vector is obtained from said digital

Art Unit: 2614

audio signal that represents and analog audio signal (digital audio signals inherently represent analog audio signals), said quality indicator vector comprises a vector associated with each time window (For examination purposes due to the 35 U.S.C. 112 rejection, examined as "said quality indicator vector is associated with each of said time windows", see "4 reflection coefficients"), and wherein said vector has a dimension at least one hundred times less than the number of audio samples in a time window, said dimension being from 1 to 10 ("sliding window (800 samples)" and "4 reflection coefficients," Column 8 Lines 19 – 46); and qualitatively evaluating said digital audio signal on the basis of said quality indicator vector ("An object of the present invention is a signal quality measurement method and system that are based on a synchronization method which allows quality measurement on the entire received signal. Briefly, the present invention achieves this object by selecting synchronization patterns from the test signal itself, and by using these patterns for both synchronization and quality measurement," and therefore since the vector of Timus is used for synchronization it is the basis for quality measurement).

**Claim 43:** Timus discloses a method according to claim 24, wherein the audio signal to be evaluated is an audio signal transmitted digitally ("A transmitter 10 repeatedly transmits the test signal. The received signal is demodulated in a radio unit 12, channel decoded in a channel decoder 14 and speech decoded in a speech decoder 16 into a stream of speech samples  $X(n)$ . These speech samples are forwarded to a synchronization unit 18, which controls the output of

Art Unit: 2614

the stored copy of the test signal from a memory 20 with a control signal C. The similarity between test signal from memory 20 and the received speech samples  $X(n)$ , which are now synchronized with each other, is measured in a quality measurement unit 22," Column 7 Lines 20 – 30).

**Claim 44:** Timus discloses a method according to claim 24, wherein the digital audio signal has had digital coding applied ("speech decoded in a speech decoder 16 into a stream of speech samples  $X(n)$ ," Column 7 Lines 20 – 30).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Timus in view of Palumbo (US 5,991,611), hereinafter Palumbo.

**Claim 45:** Timus discloses method according to claim 44, but does not explicitly state digital coding is bit rate reduction coding. Timus does state the present invention is in reference to a mobile radio communication system and also teaches that background noise may be replaced during transmission (DTX, Column 4 Lines 50 – 52). Palumbo provides further information on such a system

Art Unit: 2614

described by Timus in which speech signals are transmitted in a mobile radio system and also using the discontinuous transmission technique. Palumbo explains that in such a system it is well known to use a bit reducing code at the transmitter with a corresponding decoder at the receiver. Palumbo also explains that the discontinuous transmission technique results in a reduced bit rate since the bit rate of the "comfort noise" is very much lower than that of the speech information (Palumbo Column 1 Lines 1 – 65). Therefore, while Timus does not explicitly state that the digital coding in the mobile radio communication system is a bit rate reduction coding technique, given the teachings of Palumbo it would have been obvious to one of ordinary skill in the art at the time of the invention that the digital coding by discontinuous transmission disclosed by Timus is indeed a bit rate reduction technique and one would have been motivated to use discontinuous transmission since it has the advantage of reducing the level of interference in a cellular system such as the GSM system, Palumbo Column 1 Lines 1 – 65.

***Allowable Subject Matter***

9. Claims 29 – 33 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, and 35 U.S.C. 101 as set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.



***Response to Arguments***

10. Applicant's arguments filed May 21, 2009 have been fully considered but they are not persuasive.

11. With regards to the 35 U.S.C. 101 rejection Applicant argues that the amendment to Independent claim 24 of "said digital audio signal that represents an analog audio signal", "removes any doubt as to whether the digital audio signal is the result of an underlying transformation for use by a machine". However, as stated in the rejection above "digital audio signals inherently represent analog audio signals" and "a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing". Therefore, while Applicant states in the claim language "said digital audio signal that represents an analog audio signal" the claimed method still does not "transform underlying subject matter (such as an article or material) to a different state or thing" and still is not "tied to another statutory category (such as a particular apparatus)".

12. In regards to the 35 U.S.C. 102(e) rejection of independent claim 24, Applicant has amended claim 24 to recite "qualitatively evaluating said digital audio signal on the basis of said quality indicator vector" and argues, "By no means is signal quality evaluated "on the basis" of sad vectors in Timus". However, Applicant also admits in the same paragraph that the "so-computed

Art Unit: 2614

vectors are only used to perform coarse between the transmitted signal and the reference copy” and Applicant also states in the same paragraph, “Synchronization is intended to ease quality measurement”, and therefore the vector of Timus used for synchronization is the basis for quality measurement.

13. Applicant further argues, “the vectors computed according to Timus have a dimension which is only forty times less than the number of audio samples in the time window,” however the rejection clearly indicates the “time windows” as “sliding window (800 samples)” and said vector associated to said time windows as the vector of “4 reflection coefficients” and therefore has a dimension “at least one hundred time less” than the number of samples in a window.

14. Applicant’s arguments, see page 10, filed May 21, 2009, with respect to claim 29 have been fully considered and are persuasive. The art rejection under 35 U.S.C. 102(e) of claims 29 – 33 has been withdrawn.

### ***Conclusion***

15. Applicant’s amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is

Art Unit: 2614

filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Saunders whose telephone number is (571) 270-1063. The examiner can normally be reached on Monday - Thursday, 9:00 a.m. - 4:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2614

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S./

Examiner, Art Unit 2614

/CURTIS KUNTZ/

Supervisory Patent Examiner, Art Unit 2614